26 October 1961

MEMORANDUM FOR: DDP TECHNICAL REQUIREMENTS BOARD

ATTENTION [redacted], Secretary STAT

SUBJECT : Medium Frequency Drop Zone Beacon, HRT-2

1. This memorandum presents the current status and future plans for the T3D solution of the Technical Requirements Board Requirement No. I-3 for a drop zone beacon.

2. The beacon designed to meet the Agency's immediate requirements for a drop zone locater has been designated the HRT-2 medium frequency (MF) beacon. It has been developed by T3D/Systems Branch through a contract [redacted] as a replacement for the HRT-1 (Wesponder) and HRT-4 (RS-2/RT3A). It is an azimuth only system and operates in the 1600 to 1800 KC frequency band with 10 watts output power. The transmitter, including a 6 hour minimum battery pack, weighs 17 pounds and is 15" x 7½" x 2½" in size. The unit is designed to operate with any one of the following antennae: AN/A 42; balloon supported 150 foot wire, 16 foot whip, and a new top loaded design being developed by T3D/SB. In addition to the mercury cell battery pack, the HRT-2 will also have provisions for being powered by a new T3D/Engineering Branch hand crank generator, HHP-1, and a T3D/Chemical Branch thermo-electric power source, HFP-1. Both of these new power sources are in final prototype test. STAT

3. The basic HRT-2 system has been demonstrated and tested extensively by T3D in conjunction with DPD and the T3B Beacon Panel. Its operation with the A-42 and balloon antennas has been comparable to the beacons it is designed to replace. Its advantages are increased reliability along with lighter weight and considerably simplified operating procedures.

4. Testing of the transmitter portion of the HRT-2 system has progressed to the stage where a production contract can be initiated. This will involve a long lead time which will permit the final model to reflect any desired minor changes uncovered during the forthcoming final tests.

5. T3D has proposed the following future actions with regard to medium frequency beacon development procurement, and operational utilization:

a. All HRT-1 (Wesponder) beacons remaining in field stock should be installed as escape and evasion equipment on light aircraft and helicopters in the south-east Asia area. No additional units should be procured, and these will be replaced by HRT-2s when available.

b. All HRT-4 (RM-2/RT3A) beacons in stock (27 units) should be shipped to the FE area for use in presently planned air operations. Current procurement of 75 additional units with light weight battery packs and A-42 antennas should also be used to fill operational requirements prior to 1 January 1962.

c. The TRB Beacon Panel should continue its comprehensive tests of the HRT-2 beacon system in mountainous terrain and in the FE area. (The former tests will be held in [redacted] 30 October to 2 November and the latter at [redacted] 14 and 15 November 1961. Additional [redacted] of the HRT-2 are scheduled to follow the [redacted] when TSD personnel visit [redacted] 50X1 STAT

d. TSD should take steps to procure (via the EARMONT program) HRT-2 beacons in quantities (160 units) sufficient to meet operational requirements beginning 1 January 1962 after which time it will become the Agency standard MF beacon replacing the HRT-1 (Wesponder) and the HRT-4 [redacted]. STAT

e. TSD should continue its R&D program to improve the range capability of MF beacons by utilizing preamplifiers in the aircraft ADF, more efficient aircraft antennas, and more efficient and operationally suitable ground antennas.

C. V. S. ROOSEVELT
Chief, DD/P/TSD

CONCURRED:

APPROVED:

STANLEY W. BEERLI
AC/DD/P/DPD

[redacted] STAT
Chairman
Inexfiltration Panel

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TSD/SB/RAK:eip (26 Oct 61)